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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,917	12/13/2001	John M. Bergstrom	426882001600	2229

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EXAMINER	
TARAE, CATHERINE MICHELLE	
ART UNIT	**PAPER NUMBER**
3623	

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/021,917	BERGSTROM, JOHN M.	
	Examiner	Art Unit	
	C. Michelle Tarae	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11,13-24,26-34,36-44 and 46-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11,13-24,26-34,36-44 and 46-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Final Office Action in response to the communication received on April 19, 2006. Claims 1, 11, 24, 34, 44 and 55 have been amended. Claims 1, 3-11, 13-24, 26-34, 36-44 and 46-55 are now pending in this application.

Response to Amendment

2. Applicant's amendments to claims 1, 11, 24, 34, 44 and 55 are acknowledged. The amendments to claims 1, 11, 24, 34, 44 and 55 are sufficient to overcome the 35 U.S.C. 112, second paragraph rejection set forth in the previous Office Action. Therefore, the 35 U.S.C. 112, second paragraph rejection of claims 1-55 is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-11, 13-24, 26-34, 36-44 and 46-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zoltners et al., "Integer Programming Models for Sales Resource Allocation" (March 1980) and Dulaney et al. (U.S. 6,341,269).

As per claim 1, Zoltners et al. discloses an apparatus that determines allocations in a business operation to maximize profit on a computer system, comprising:

a memory, a processor that accesses the memory to retrieve computer-executable instructions to perform: collecting profit data for a plurality of classes in the business operation, each class including an allocation having a cost function, and each allocation belonging to the group consisting of physical allocations and economic allocations (page 1, paragraph 2; page 2, paragraphs 1 and 2; Table 1 on pages 3 and 4; page 9, last paragraph; The reference discloses allocating sales resources such as sales budgets, sales calls, sales reps, etc., among various sales entities (i.e., classes) such as sales districts, accounts, prospects, products, etc., where the allocations are made based on expected profit results and cost data for each sales entity. The expected profit and cost are subjective data input by the user. The allocations are physical (i.e., geographic regions) as well as economic (i.e., sales budgets).);

determining profit functions for the allocations from the profit data by:

determining demand distributions for the allocations from the profit data and determining each profit function from a corresponding demand distribution (page 2, paragraph 2; (M3) on page 11; Table 1; The sales response, or demand, function represents the sales tradeoff which can be expected from various resource allocation strategies.).

formulating a Multiple Choice Knapsack Problem to maximize profit from the profit functions, the cost functions, and a cost constraint ((M1) on page 9; (M3) on page 11; M1 and M3 are Multiple Choice Knapsack models that maximize the profit based on various resource allocations and cost constraints.); and

solving the Multiple Choice Knapsack Problem to determine values for the

allocations (the illustrated applications on pages 9 and 10; The Multiple Choice Knapsack model is solved for various sales resource allocation strategies such as sales representative time management and sales force resource allocation.).

While Zoltners discloses determining a model for sales resource allocation that maximizes profit using time periods and allocation strategies for sales entities, or products (page 8), Zoltners et al. does not expressly disclose that a profit function is determined for a time interval between *restocking cycles, a probability of finding a given number of units of the item on display and the spatial allotment of the item.* Dulaney et al. discloses optimizing the process of determining the quantities of a product to carry on the shelf (i.e., the facings). The facing optimization process requires data such as frequency of shelf replenishment (i.e., restocking cycles), space required per item (i.e., spatial allotment), and probability of stockout, which is a probability of not having any items left on the shelf (col. 2, lines 55-67; col. 4, lines 14-24 and 30-53; col. 6, lines 2-6; col. 6, line 66-col. 7, line 4). Dulaney et al. further discloses that facing optimization is driven by several business objectives including maximizing profit (col. 7, lines 8-12). Thus, Dulaney et al. and Zoltners are analogous art in that each is concerned with product allocation decisions that will maximize profit. At the time of the invention, it would have been obvious to a person of ordinary skill in the art for the sales resource allocation for maximizing profit models of Zoltners to include the facing optimization models of Dulaney et al. as Dulaney et al.'s profit maximization models consider more detailed data (i.e., restocking cycles, spatial allotment and probability of finding a given number of units of the item on display) that enable a retailer to determine how to

maximize profit at the product shelf stocking level, thereby enhancing the granularity and comprehensiveness of the profit maximization models of Zoltners. Furthermore, applying the granularity of data required by the profit maximization models of Dulaney et al. to the models of Zoltners, enhances the flexibility of the more general models of Zoltners et al. by allowing the general models to be modified as needed to solve specific business problems.

As per claims 3 and 4, Zoltners et al. discloses the apparatus according to claim 1, wherein each demand distribution includes a Poisson model or a Markov model (row 4 on page 3; row 2 on page 4; The reference discloses using both Poisson and Markov models in its sales resource allocation strategies.).

As per claim 5, Zoltners et al. discloses the apparatus according to claim 1, wherein each demand distribution includes a normal distribution model (paragraph 2, page 2; row 5 on page 5; The reference discloses applying concave functions, also known as bell-curve and normal distribution models to its resource allocation strategies.).

As per claim 6, Zoltners et al. discloses the apparatus according to claim 1, wherein the allocations include spatial allotments (paragraph 1, page 2; sales representative time management and sales force resource allocation on pages 9 and 10; The reference discloses spatial allotments such as deciding how to allocate time to sales representatives or products across sales territories.).

As per claim 7, Zoltners et al. discloses the apparatus according to claim 1, wherein the allocations include monetary allotments (paragraph 2, page 1; paragraph 2,

page 18; The reference discloses the decision of allocating sales budgets across products and/or markets.).

As per claims 8-10, Zoltners et al. discloses the apparatus according to claim 1, wherein the cost constraint is a greater-than-or-equal-to inequality constraint, an equality constraint or a less-than-or-equal-to inequality constraint (page 11; Model (M3) illustrates equality, greater-than-or-equal-to and less-than-or-equal-to inequality constraints.).

As per claim 54, Zoltners et al. discloses the apparatus of claim 1, wherein determining demand distributions for the allocations from the profit data comprises: modeling the demand distributions with corresponding probabilistic functions (row 1 on page 5; The reference discloses applying probability estimates to the resource allocation strategies.).

As per claim 55, Zoltners et al. does not expressly disclose the apparatus of claim 1, wherein the probability corresponds to finding any number of units of an item on a store shelf. Dulaney et al. discloses determining the probability of stockout, which is a probability of not having any items left on the shelf (col. 6, lines 2-6; col. 6, line 66-col. 7, line 4). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the demand probability functions in the more general profit maximizing models of Zoltners et al. to a more specific probability such as finding any number of units of an item on a store shelf as taught by Dulaney et al. because doing so allows the models of Zoltners et al. to maximize profit for inventory replenishment at the

product shelf stocking level, thereby enhancing the granularity and comprehensiveness of the profit maximization models of Zoltners.

Claims 11, 13-24, 26-34, 36-44 and 46-53 recite substantially similar limitations to claims 1, 3-10, 54 and 55 above. Therefore, claims 11, 13-24, 26-34, 36-44 and 46-53 are rejected on the same basis as claims 1, 3-10, 54 and 55 above.

Response to Arguments

5. Applicant's arguments are with regard to the newly added amendments. The arguments are moot in view of the new grounds of rejection provided above.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Landvater (U.S. 6,609,101) discusses a system for determining time-phased product replenishment;
- Failing et al. (U.S. 5,241,467) discusses space management for shelves in retail stores; and
- Waller et al. (2001/0047293) discusses a system for optimizing inventory, including facing optimization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Michelle Tarae (formerly, C. Michelle Colon) whose telephone number is 571-272-6727. The examiner can normally be reached Monday – Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 571-272-6729.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Michelle Tarae
C. Michelle Tarae
Patent Examiner
Art Unit 3623

June 24, 2006